

MEDUSA

WHITE PORTLAND CEMENT STAINLESS



THE SANDUSKY CEMENT COMPANY
CLEVELAND, OHIO, U.S.A.

TO THE READER - Owing to an error, the lower illustration on stucco home, of Medusa White Cement, is described as the residence of St. Louis, Mo. The illustration shown is the residence of *R. Hakewessel*, Conn. The architect was *William T. Marchant* and the Mason Contractor *Medusa White Cement* was used.

MEDUSA

WHITE PORTLAND CEMENT

PATENTED OCTOBER 13, 1908

STAINLESS

PERFECTLY WHITE IN COLOR

THE FIRST TRUE WHITE PORTLAND EVER MANUFACTURED



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THE SANDUSKY CEMENT COMPANY
ENGINEERS BUILDING CLEVELAND, O., U. S. A.



Ornamental Concrete Work of Medusa White Portland Cement

Medusa White Portland Cement

Patented Oct. 13, 1908

MEDUSA White Portland Cement is the first true white Portland ever manufactured and is guaranteed to be a high testing Portland, passing all the requirements of the American Society for Testing Materials and of the United States Government. It is perfectly white in color and non-staining, and its artistic possibilities are unlimited. Medusa White is to be used in the same manner as ordinary Portland, from which it differs in no respect except in its pure white color.

Medusa White Portland Cement when mixed with white sand, ground white marble, granite, quartz or white limestone is especially suitable for exterior stucco, steps, balustrades, columns, doorways, window sills, lintels, copings, watertables, etc., and for interior wainscoting, floors, staircases, panels and mantels.

Medusa White is unexcelled for cemetery work—monuments, vaults, urns and plot borders, and for parks and grounds—fountains, seats, railings, steps, curbing, walks and gateways. It is an incomparably improved substitute for plaster in reproducing statuary figures and groups for galleries of casts.

Pure white concrete building blocks with the appearance of solid blocks of marble, or blocks of various high-class finishes can be obtained by the use of Medusa White Cement, while the possible uses of Medusa White in the manufacture of garden furniture and in the production of white and colored tiles for mosaic floors, bathrooms and fireplaces, are too numerous to be here more than mentioned.

Architects, stone setters and terra cotta manufacturers are recommending the use of Medusa White as the one sure method of obtaining satisfactory and permanent results in stainless mortar for backing, setting and pointing marble, granite, terra cotta, glazed tile, face brick, etc.

Medusa White Portland Cement is being used in all parts of the world with universal satisfaction, and has been used extensively by the United States and foreign governments, conclusive evidence of its extraordinary high quality. A trial will convince the most skeptical that it is all we claim for it.



City Hall, Oakland, California

Medusa White Used for Setting and Pointing Granite and Stone

The new City Hall of Oakland, California, which was completed recently, is the highest municipal building west of Chicago. Medusa White Portland Cement was used most satisfactorily for setting and pointing the granite and stone work.

Geo. Frederic Ashley, personal representative of the architects, Messrs. Palmer, Hornbostel & Jones, New York City, was superintendent of construction.

Non-Staining Portland Cement Mortar

OWING to its entire freedom from coloring ingredients, Medusa White Portland Cement is absolutely stainless, and can be used for laying or setting stone, granite, terra cotta, face brick and glazed tile, and for backing fine textured stone. It is particularly adapted for outside work and will be permanent in pointing joints between blocks or slabs of marble, etc. Extra precaution should be taken in the selection of white sand and ground marble for non-staining work, as some contain a large percentage of organic substances which discolor.

Medusa White is being used very extensively as a non-staining Portland cement mortar in much important work throughout this country by eminent architects, engineers and contractors, and especially by the United States Government, and mention of the following should be proof conclusive of its superiority:

United States Government Post Offices

New York City	Athens, Ohio	Asbury Park, N. J.
Canadaigua, N. Y.	Ironton, Ohio	Washington, D. C.
North Tonawanda, N. Y.	Connersville, Ind.	Ottumwa, Iowa
Bristol, Conn.	Peru, Ind.	Temple, Texas
Wallingford, Conn.	Wabash, Ind.	Lake Charles, La.
Frankfort, Ky.	Jeffersonville, Ind.	Athol, Mass.
Wooster, Ohio	Watertown, Wis.	Fairmont, W. Va.
Marion, Ohio	Pontiac, Mich.	Carlisle, Pa.,
Delaware, Ohio	Mt. Clemens, Mich.	and many others.

United States Custom House, Boston, Mass. - - - - - Setting interior and exterior marble.
Peabody & Stearns, Architects. The Norcross Bros. Co., General Contractors.

Dime Savings Bank Building, Detroit, Mich. - - - Laying enameled brick, terra cotta and granite.
D. H. Burnham & Co., Architects. Lanquist & Illsley Co., General Contractors.

Commercial National Bank Building, Charlotte, N. C. Marble, terra cotta and enameled brick work.
Mowbray & Uffinger, Architects. The Whitney Co., General Contractors.

Peoples Savings Bank Building, Providence, R. I. Setting and pointing interior and exterior marble.
Clark, Howe & Homer, Architects. The Norcross Bros. Co., General Contractors.

August Heckscher Building, New York City. - - - - - Setting marble and laying face brick.
Jardine, Hill & Murdock, Architects. Fountain & Choate, Mason Contractors.
Dickson & Turnbull, Marble Setters.

National McKinley Birthplace Memorial, Niles, Ohio. - - - - - Setting and backing marble.
McKim, Mead & White, Architects. John H. Parker Co., General Contractors.

Hamilton County Court House, Cincinnati, Ohio. - - - - - Backing, setting and pointing.
Rankin, Kellogg & Crane, Architects. Chas. McCaul Co., General Contractors.

Parliament Building Winnipeg, Manitoba, Canada

**Medusa White Portland Cement
Used for Setting Stone**

Manitoba's new parliament building, to cost \$2,859,750, and to be completed during 1917, is expected to far surpass all other public buildings in the Dominion of Canada, and will contain, besides many interesting features, over \$1,000,000 in cut stone, which will be used in the construction of the walls and towers.

On recommendation of F. W. Simon, Architect, Liverpool, England, and Provincial Architect Victor Horwood, the contract was awarded to Thomas Kelly & Sons, one of the largest and most successful contracting firms in the Dominion, and they are using Medusa White Portland Cement for mortar for setting stone.



Buckingham Palace London, England

Medusa White Portland Cement was used by the Cubitt Concrete Construction Co., London, for bedding and jointing material of new entrance gateway and to set the Portland stone in re-facing Buckingham Palace, residence of King George V and English royalty, as it does not stain or discolor stone or delicate marble like ordinary Portland cement.

Medusa White Cement was also found a most suitable material in construction of the Queen Victoria Memorial, for jointing and bedding the large groups of figures of the Queen, Justice, Motherhood, etc., on account of the non-staining qualities and as it does not show the jointing.





New York Telephone Company Building, Albany, New York

The New York Telephone Company's new building in Albany, New York, is a towering masterpiece of structural magnificence. It is one of the finest and best equipped office buildings in the United States, of steel construction and fire-proof throughout.

The exterior is of granite limestone, enameled brick, and mat glaze, cream color terra cotta of three slightly varying shades. Roof is of green Spanish tile laid on six-inch concrete slabs, and cresting and finials are of pure copper.

It is a fourteen story building—twelve above ground and two below. Floors are of concrete, and all toilets, corridors and stairs have marbled base and tiled floors. Main entrance is of marble, with marble mosaic floor, and above the marble is ornamental plaster and Caen stone panels.

The stainless mortar used for the face brick and for setting marble was composed of one part Medusa White Portland Cement and three parts white sand, with hydrated lime added to the extent of twenty per cent of the cement, and the joints are tooled to a slightly concave surface.

McKenzie, Voorhees & Gmelin of New York City were the architects. Feeney & Sheehan Building Company of Albany were the general contractors.



The First Bridgeport National Bank Building, Bridgeport, Conn.

Medusa White Cement Used for Setting Face Brick and Terra Cotta

This handsome new building was designed by Tracy & Swartwout, architects, New York, to whom the credit is due for the production of such a distinctive and artistic result.

Medusa White Portland Cement was used in the setting of face brick and terra cotta throughout the exterior construction, and has given entire satisfaction in appearance and setting qualities. After various experiments with other materials, Hoggson Brothers, Contracting Designers of New York, adopted Medusa, advising as follows: "We finally resorted to the use of one part Medusa White, three parts ordinary bank sand and one shovel full of lime putty to a barrel of cement, which produced an easy working mixture, excellent bonding tendency and the required color, giving a shade almost identical with the light brick used on the above building."

Medusa White was also used by Hoggson Brothers on the Farmers and Mechanics Bank, Middletown, Conn., in setting terra cotta and brick work, also for interior and exterior work on various library and other buildings for the past several years, and they have always found it to be a reliable and satisfactory product.

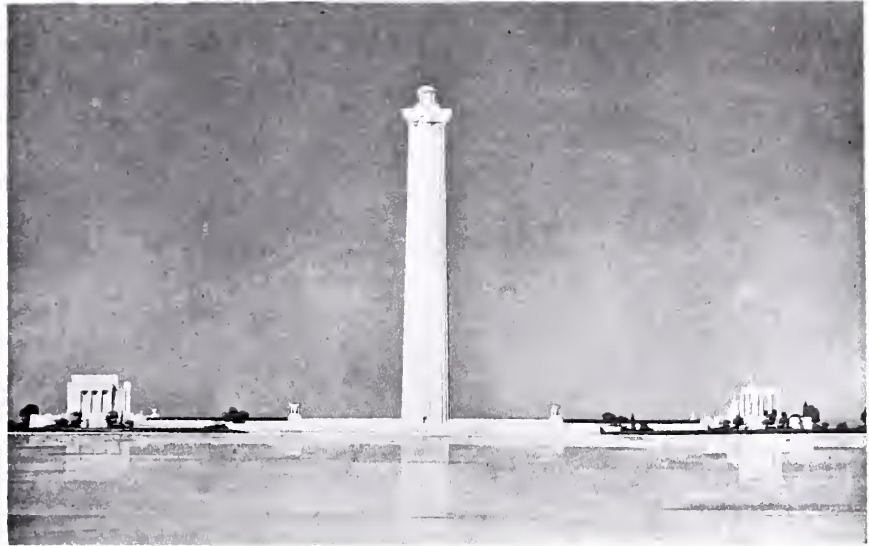
Perry Memorial Put-in-Bay, O.

**Granite Laid in Medusa White
Portland Cement**

The Perry Memorial, Put-in-Bay, Ohio, erected to commemorate the valor and courage of a great commander — Oliver Hazard Perry — and the one hundred years of peace between Great Britain and the United States, consists of a great Doric column, with a museum on the left, and a statue flanked by a Colonnade, on the right. The column is 335 feet high by 45 feet in diameter at the base.

The stone selected for the entire Memorial is a white granite with a delicate pink cast and is laid in Medusa White Stainless Portland Cement, which is especially adapted to this character of work.

J. H. Freedlander and A. D. Seymour, Jr., were the architects.



Entrance to Col. Samuel P. Colt's Farm

The portals erected by Col. Samuel P. Colt to mark the entrance to the drive, along the shores of Narragansett Bay, which he has built and thrown open to the public, are of Georgia marble. The design is French in character, and mounted on the main pedestals are bronze bulls purchased by Col. Colt in France.

This is very beautiful work, and Medusa White Portland Cement was used for setting marble. The architects were Clark & Howe, and the builders, The Norcross Brothers Company, both of Providence, R. I.



Stucco

STUCCO may be applied to brick, stone, hollow tile, concrete block and monolithic concrete walls; also to frame structures on metal lath or stucco board. The average cost of stucco above the usual wood type of construction is 3 per cent.

Conditions must determine whether one, two or three coat work is necessary. If the wall is rough and uneven, three coats should be used. To obtain a uniform color three coats are necessary for a slap-dash finish, the second and third coats of which should consist of Medusa White Cement, as in a finish of this kind there are numerous places that are not covered by the third coat. For a stipple finish three coats are also recommended, Medusa White Portland Cement to be used in second and finish coats.

Plasterers' hair may be used in the first coat for stucco work, in the proportion of one pound to one sack of cement.

The use of hydrated lime is recommended, to the extent of from 10 per cent to 15 per cent of the weight of cement, as it makes the mortar more plastic and adhesive and work easier under the trowel and assists to a great extent in preventing hair-cracks. The cement and hydrated lime should first be thoroughly mixed in dry form; then the aggregate should be added and mixed, before the addition of water.

Work must be thoroughly wetted (with clean water) to prevent absorption of water from the fresh mortar, and still be moist before the application of each coat to insure a perfect bond. The finish coat of stucco should be kept moist by spraying with water, for at least a week, and protected from the direct rays of the sun or warm winds by means of a damp canvas or burlap, frequently sprinkled; this will prevent hair-cracks and checking. Excessive troweling should also be avoided, as this is often the cause of hair-cracks on flat or smooth surfaces.

The plastering should be started at the top of the wall and carried downward. Care should be taken to make the stucco work continuous, that is, one patch of plaster must not be allowed to dry before the adjoining space is covered. If it is impossible to work the full width of the wall at one time, the joint should be at some natural division of the surface, such as a window or door. If this precaution is not observed, cracks and differences of color are likely to occur in the finished surface.

Stucco should never be applied when the temperature is below freezing.

Only a small quantity of plaster should be mixed at one time (not more than will be used within one hour), so the cement does not have an opportunity to set before being used.

One barrel Medusa White Portland Cement (4 sacks of 94 pounds net each) and two parts of aggregate will cover approximately:

$\frac{1}{4}$ inch thick.....	480 square feet
$\frac{1}{2}$ inch thick.....	240 square feet
$\frac{3}{4}$ inch thick.....	160 square feet

Colored Concrete

Any desired color can be produced by the use of dry mineral colors with Medusa White Portland Cement, making possible permanently artistic and brilliant effects not heretofore obtainable. Mix the coloring matter thoroughly with the sand till a uniform color results and then mix with the cement. The Portland Cement Association in their "Cement Stucco" bulletin refer to this subject in part as follows:

"One of the most important questions, and one that is bound to arise whenever the use of coloring-matter in cement is contemplated, is that of permanency. Blacks are safe colors, as a rule, although it is better to avoid experiments with cheap blacks. The carbon blacks are preferable to lampblacks, because they do not have the same tendency to float to the top during mixing. There are fewer grades of carbon blacks and there is, therefore, less likelihood of getting a worthless color. Ultra-marine blue, if of good quality, will hold its color for a number of years, and generally possesses the virtue of fading out evenly, when it does finally lose its color. It cannot be classed as a permanent color, as is black, brown or ochre.

Table of Colors

Color Desired	Commercial Names of Colors For Use in Cement	Pounds of Color Required for Each Bag of Cement to Secure:	
		Light Shade	Medium Shade
Grays, blue-black and black.....	{ Germantown Lampblack	$\frac{1}{2}$	1
	{ Carbon Black	$\frac{1}{2}$	1
Blue shade	{ Black Oxide of Manganese	1	2
Brownish-red to dull brick red.....	{ Ultramarine Blue	5	10
Bright red to vermillion.....	{ Red Oxide of Iron	5	10
Red sandstone to purplish-red.....	{ Mineral Turkey Red	5	10
Brown to reddish-brown.....	{ Indian Red	5	10
Buff, colonial tint, and yellow.....	{ Metallic Brown (Oxide)	5	10
	{ Yellow Ochre	5	10

"Green is an unsatisfactory color to experiment with. Commercially, there is no green cement color on the market that will not fade when mixed with cement and exposed to light and weather.

"Reds and browns need little comment in addition to the explanation given in the Table of Colors. Yellow ochres offer a wide variety of shade and quality. French ochre, if genuine, is safe to use, and with it most attractive colonial yellow and buff tones can be secured. There are a number of good yellow ochres manufactured in this country, but naturally they are not of the cheapest variety. It is always safe to know the name of the manufacturer, and also whether or not the color was specially designed for coloring cement."

Finish

Smooth Finish—A smooth finish can be secured by bringing the final coat to an even surface with a steel trowel, with as little rubbing as possible.

Stippled—After a smooth finish is secured, pat lightly with a whisk broom when sufficiently set to obtain a uniform surface.

Sparkling Finish—Make 10 per cent solution of muriatic acid in water and scrub with stiff brush after final setting. Thoroughly rinse with clean water.

Slap-Dash or Rough Cast—After the second coat has been brought to a smooth, even surface and before attaining final set, dash on the third coat evenly with a wooden paddle, to produce a rough surface of uniform texture when viewed from a distance of 20 feet.

Pebble-Dash—A pebble-dash surface can be secured by applying the final coat fairly wet and then throwing clean pebbles into the fresh plaster. The pebbles should be about $\frac{1}{2}$ inch in diameter and should run uniformly. Before throwing them on the fresh plaster the pebbles should be wet. The work should be started at the top and the pebbles thrown with a sweeping motion such as is used in sowing grain. The pebbles must, of course, be distributed uniformly over the surface, and must be thrown against the fresh soft plaster with sufficient force to embed them securely.

Care must be taken not to disturb the cement after it has started to set, and in order to avoid this, the surface must be covered with the pebbles immediately after the fresh plaster is applied. A plasterer by ordinarily quick work can cover a surface of 6 feet square with plaster and then apply the pebbles.

Aggregate

To produce white concrete or white artificial stone, Medusa White Portland Cement should be carefully mixed with white sand, ground white marble, white limestone, quartz or granite, graded from fine to coarse, and passing when dry a screen having $\frac{1}{8}$ inch diameter holes.

Excellent grades of materials can be obtained from the following:

Conlin & Co., Tuckahoe, N. Y.....	White marble
The Hoosac Co., North Adams, Mass.....	White marble
The Enos Adams Co., Bennington, Vt.....	White quartz
Monarch Mining Co., Jersey City, N. J.....	White granite
Wisconsin Granite Co., Chicago, Ill.....	Red and black granite
Ottawa Silica Co., Ottawa, Ill.....	White sand
Crown Point Spar Co., Crown Point, N. Y.....	Mica-spar



Medusa White Portland Cement in Calcutta, India

Duncan Bros. Building, Calcutta, India

As an attestation of the world-wide use of Medusa White by eminent architects and contractors, and the great favor it is meeting with in foreign lands, we reprint in part the following from "The Calcutta Englishman" of June 15, 1915:

"A project which demonstrates the value of White Portland Cement as a hard finish for exterior plaster, has just been completed under the supervision of Mr. Vincent J. Esch, architect, by Messrs. Mackintosh Burn & Co., the well-known builders and contractors of this city, using one part Medusa White Portland Cement and two parts quartz sand for entire facing of Duncan Bros. building.

"Several local firms have been able to produce very beautiful marble effects, using Medusa White Portland Cement, which includes very fine artificial marble floors in St. Thomas' church and in the new chapel in Howrah.

"Up-country, their local mistries have been able to obtain equally good results, and an excellent illustration is the palatial residence recently erected by the Hon. Mr. Sinha at Bhagalpore. This experiment opens up a new field for the use of White Portland Cement and we expect to see the present insanitary Crazy China peculiar to Calcutta superseded in the near future.

"The artificial marble produced has a better appearance and is harder and less porous than natural marble, and is more suitable for floors in a damp locality."

The finish coat of Medusa White on the Duncan building is $\frac{1}{4}$ inch thick. In the view herewith the bamboo scaffolding can be plainly seen.

Concrete Farm Structures De Luxe

Medusa White Used for Cleanliness and to Beautify the Farm

One of the most important policies of a progressive farmer and dairyman is to erect convenient and sanitary buildings, and Edward A. Kuharske, Rockford, Ill., is a leader in this advanced method of construction, having designed and built a milk house, ice house, horse barn, water tower, fence, etc., of concrete, with a finish of Medusa White Portland Cement.

The milk house is of the monolithic type, the roof, partitions and smoke stack having been cast as the work progressed, and consequently all are connected in the reinforced concrete manner with the side walls. Medusa Gray Portland Cement was used, and the whole structure both inside and out was given a coat of neat Medusa White Portland Cement, which was applied immediately after forms were removed. The forms were raised, and the white cement was brushed on the work of the previous day, and by this method it has bonded perfectly with the gray cement and has shown no tendency to peel or brush off.

The concrete horse barn is the largest of its kind in the vicinity of Rockford, and there perhaps is no similar structure in that part of the country. It is indeed a model, having many stalls both of the ordinary and box type with the latest sanitary features.



General View of Buildings

The second floor is arranged with rooms for the workmen to live in. Feed racks, water troughs, partitions, plain feed boxes, cupola, and grain bins are all of concrete, no wood whatever having been used in the entire structure except for the doors, and they were afterwards tinned on the outside to render them fireproof. The interior and exterior were finished with Medusa White.

The concrete water tower, supplying the dairy and residence with water, was given a brush coat of Medusa White Cement.



Concrete Milk House and Ice House

**Residence
of Robert J. Allyn
Hartford, Conn.**

Stucco of Medusa White
Applied to
Old Stone Walls

This residence was originally built of stone, and in remodeling, the exterior walls were first thoroughly cleaned and all loose material was removed. A rich cement mortar was then worked into all crevices, followed by another coat to give an even surface, which was well scratched. The two last coats consisted of Medusa White Portland Cement and white sea sand, and were troweled to a smooth finish.

The new additions were made to conform to the main building and likewise stuccoed with Medusa White.

Edw. T. Hapgood was the architect, and R. F. Jones the contractor, both of Hartford.

**Monterey Hotel
Asbury Park, N. J.**

Medusa White Cement
Stucco on Brick

The Monterey Hotel occupies an entire city block on the ocean front of Asbury Park, New Jersey.

The building is a brick structure of Spanish colonial style, stuccoed with Medusa White Portland Cement, with roof of red tile and trimmings in green.

Watson & Huckel, Philadelphia, Penna., were the architects.



Robert J. Allyn Residence, Hartford, Conn.
Edw. T. Hapgood, Architect R. F. Jones, Contractor



Monterey Hotel, Asbury Park, N. J.
Watson and Huckel, Architects

Prominent Owner and Architects

Use Medusa White Portland Cement

The group of service buildings on the private estate of August A. Busch, President of the Anheuser-Busch Brewing Association, include a model dairy, stables, a large coach-house, spacious garage, club-house, dwelling for at least five families, and chauffeurs' lodge. The buildings provide for the housing of eighteen cows and twenty horses.

The estate consists of about 200 acres of richly wooded land in the most picturesque section of St. Louis County, about twelve miles from the city of St. Louis, on the Gravois Road. This once formed the southern half of U. S. Grant's farm, from which he enlisted as lieutenant in the Fourth Missouri at Jefferson Barracks, only a few miles distant in the direction of the Mississippi River. "Hardscrable," the old log cabin wherein the young lieutenant and his bride began house-keeping, still stands on the premises as a memorial.

The buildings where no connection is essential, are divided by a solid brick wall for fire protection. The walls are of brick, 13 inches and 18 inches thick, with Medusa White Portland Cement rough-cast on the outside.

Klipstein & Rathmann, St. Louis, Mo., were the architects.



"Bauernhof"
on Estate of
August A. Busch
Near St. Louis
Missouri

St. Mary's Hospital
San Francisco
California

Exterior Finish of
Medusa White
Portland Cement
Willis Polk, Architect





Medusa White Adapted to Old Style Architecture

This building, although in the city, is planned as a roadside inn, and caters largely to St. Louis automobilists who pass this way. It is an adaptation of the old half-timber architecture, built in the style of the sixteenth and seventeenth centuries, as found in the cities of Nuremberg, Rothenburg and other Bavarian cities, and was designed by the well-known architects, Klipstein & Rathmann, of St. Louis, Mo.

The first floor has the tap room proper with its old tile floor, drinking stalls, heavy beamed ceiling and ornamented walls, with a dining room in connection. In the second story and attic are the living quarters of the inn-keeper.

The exterior walls are of brick with Medusa White Portland Cement rough cast on the outside; the second story is laid off in half-timber. The roof is quite steep, is of mottled slate, with terminal finials on all ridges and gables. The oriel window at the corner is built out on the column below and has the spire-like roof that is typical of the style of this period. The entrance-way at the corner is finished entirely in rough cast Medusa White Portland Cement and has a vaulted ceiling.

Residence of R. A. Herold, Architect, Sacramento, California

In planning his residence, R. A. Herold of Sacramento, California, one of the most prominent architects of the West, was influenced by local conditions, and designed a building typical of California.



The exterior walls of the residence are of 2 in. by 6 in. studding with exterior sheathing, over which was placed Keystone hair insulating felt and then furred with 1 in. by 2 in. strips and lathed with stiffened Clinton wire lath.

Exterior plastering is three coat work. In the first coat about 10 per cent hydrated lime was used. The finish coat is composed of Marysville sand and Medusa White Portland Cement, giving a light gray color.

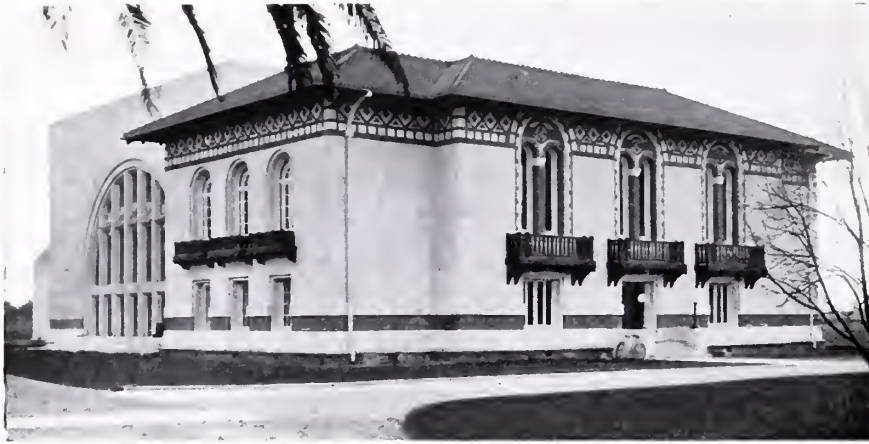
Alhambra Apartments San Francisco, Cal.

Medusa White Cement, Tinted a Warm Cream, Used for Exterior Stucco

This structure represents a new departure in apartment house design. The style is Moorish and the architect's unusual treatment of the facade afforded a splendid opportunity to demonstrate the artistic possibilities of Medusa White Portland Cement for exterior work.

Medusa White was tinted a warm cream, and was applied as an exterior finish by the Pacific Plastering Company, plastering contractors. J. F. Dunn of San Francisco was the architect.





Agnew's
State Insane Hospital
Agnew, California

Assembly Hall and
Club Rooms

California State
Architectural Dept.
well pleased with
Medusa Products

An institution exceptional in plan and design is that for the care of the insane at Agnew, California, covering 331 acres of land, and practically all of the buildings have exterior finish of Medusa White Portland Cement and Medusa Waterproofing, another large and notable project for which our materials were selected.

The buildings were designed by the California State Architectural Department, and W. D. Coates, Jr., architect, advised us a short time ago that of the 28 buildings of this institution erected by him, most of them were covered with Medusa White Portland Cement, containing Medusa Waterproofing, and had "stood the test of time to the extent that there is hardly a crack anywhere."

Residence of
H. P. J. Hamilton,
Jr.
St. Louis, Mo.
Guy Study, Architect
Medusa White
Portland Cement
and marble dust
used for stucco.



From a portion
of the architect's
description :

"Our method of applying the last coat, so as to obtain shade rather than shadow, is to mix the white cement and marble dust in a rather thin plaster and throw it on with a wire brush or a paddle. This last coat should be thin enough to run very slightly after it is applied to the wall. It can be put on any thickness (and in all cases so as to cover the under coat) but the consistency should be thin or wet enough to run down very slightly, not to exceed $\frac{1}{2}$ inch, after it strikes the wall. It is this running that gives the slightly rounded surfaces, and gives a wall, that even on close observation, has the appearance of pebbles, and at a short distance off the texture is identical.

"A section of the wall about 20 feet square should be covered at a time with the rough coat of portland cement plaster applied under pressure, followed in about two hours or so with the finish coat, thrown on while the first coat is still green, thus uniting into a solid mass.

"The residence of Mr. Hamilton is of brick, but the treatment of the wall can be applied to frame as well. The house shown here is about three years old, and while not as white as the first year it can still be called sparkling white. The surface is unusually hard, and in erecting an addition to one of our houses, I have seen the brick break before the plaster. Some of these finishes have stood for ten years and seem to be as good today as when first applied."

Residence of G. A. Boeckling, Sandusky, Ohio

Medusa White Used for Exterior Finish and for Laying Brick Walks

The residence of G. A. Boeckling, President and General Manager, Cedar Point Pleasure Resort Co., Sandusky, Ohio, is of hollow tile construction. First and second coats of exterior stucco are Medusa Gray Portland Cement, and the third or finish coat of one part Medusa White Cement and two parts crushed white marble.

Terrace walls and curb walls around walks were also finished in Medusa White and crushed marble. Sidewalks are red brick, laid with white cement mortar composed of one part non-staining Medusa White Portland Cement and two parts white silica sand. All exterior trim was made by The Fischer & Jirouch Co., Cleveland, who are also using Medusa White.

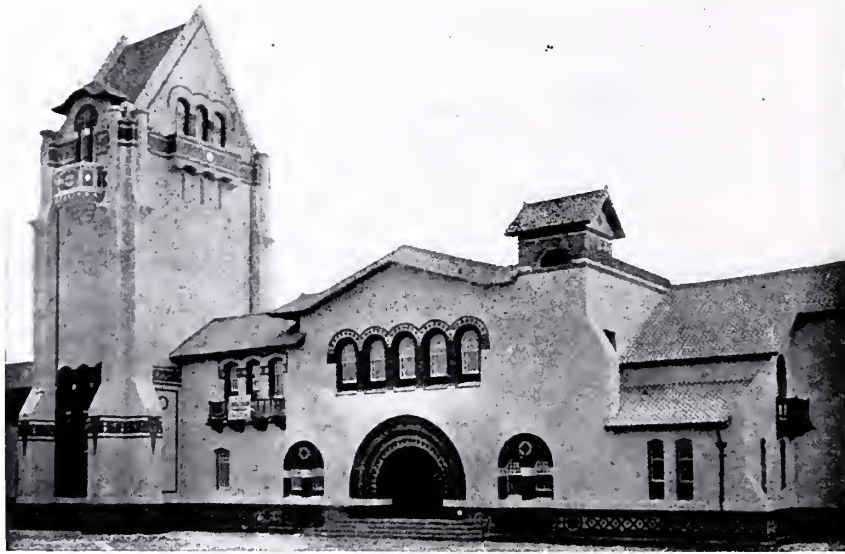
The W. W. Hodges Co., Cleveland, Ohio, were the architects.



Residence of S. S. McCord, St. Joseph, Missouri

Walter Boschen, Architect

Medusa White Portland Cement used for exterior finish on hollow tile,
and for the balustrade and terrace floor



State Normal School, San Jose, California

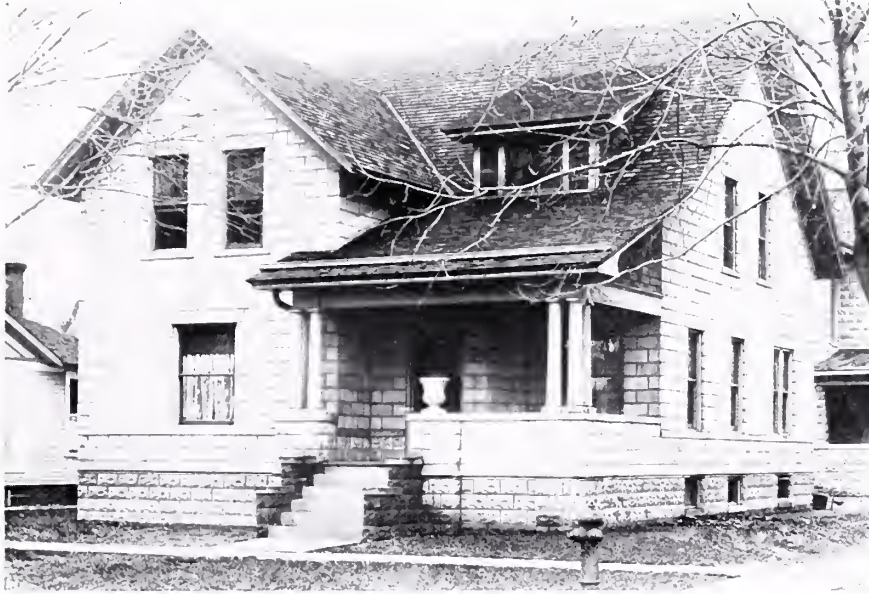
This is said to be the largest reinforced concrete school building, in ground area, in the world, covering 246 by 472 feet, is two stories high, and because of its immense proportions and unusual exterior treatment it is attracting world-wide attention. The decorations of the structure are unique, and demonstrate the possibilities of ornamentation of all-concrete structures at comparatively small expense.

The building is of a rectangular shape, broken up slightly with pavilions and buttresses, is absolutely monolithic, has a total of 155 rooms and an imposing tower equivalent to five stories. The architecture is a combination of the so-called Mission and Spanish, with suggestions of the Moorish and Gothic, the latter being quite in evidence in the tower treatment. From an artistic standpoint, nothing has thus far been developed in California in public buildings, built entirely of reinforced concrete, to equal it.

The exterior of the rough walls is covered with a pebble dash of Medusa White Portland Cement, and the interior of the corridors is treated with a stipple finish, while the interior of the building has a hard-wall sand finish. Red tile were used for the roof, and red pressed brick and Faience tile for inlay work to decorate the entrances and towers. The main vestibule floor is laid in Welsh quarry tile, while the corridor floors are of colored cement. All classroom floors, of concrete, are covered with 2 $\frac{1}{4}$ inch maple. The wood finish is Oregon pine, stained and polished.

The total cost was \$272,000 and the construction was done by the F. O. Engstrum Company. The design is that of the state engineer and architect, Nat Ellery and W. D. Coates, but the actual development of the plan was left to Valere Demari, a young French student.

Concrete Blocks of Real Merit



Residence of Isaac Grogg, Auburn, Ind.

The Auburn Novelty Works, Auburn, Ind., have all the block trade for miles around their city, and put up nearly one hundred buildings in the last seven years. They have grown from the output of one hand machine to the capacity of 1,200 blocks per day, besides all their other lines of concrete products.

The residence of Isaac Grogg was the first white job put up by the Auburn Novelty Works. In the manufacture of concrete blocks they used one part Medusa White

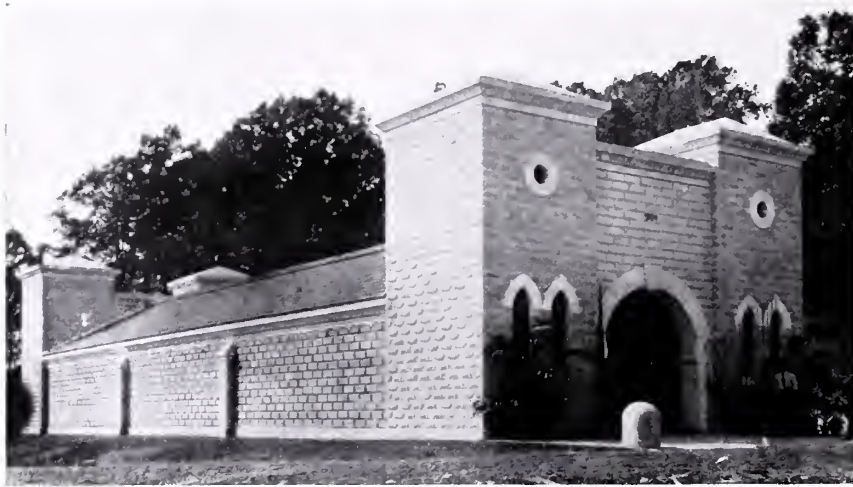
Cement with Medusa Waterproofing added, two and one-half parts white sand, and hydrated lime.

They also use Medusa Waterproofing, which permits the interior plastering to be applied directly to the block wall without furring or lathing, and this lowers rather than increases the expense to the owner.

Medusa White Cement blocks waterproofed with Medusa Waterproofing. Blocks furnished by the Manlius Lumber Co., Manlius, Ill.



Home of Chas. Barber, Manlius, Ill.



**Mausoleum of Blocks
Faced with Medusa
White Cement**

**Nine Years' Exposure
to the Weather Improves
the Appearance**

The suitability of Medusa White Portland Cement and Medusa Waterproofing for concrete block work is strikingly demonstrated in the construction of a mausoleum in Decatur, Illinois, and is of special interest to concrete block manufacturers.

Nine years ago F. J. Walters built a mausoleum 40 feet by 110 feet and 24 feet high, containing 350 crypts, one receiving vault and chapel. Cement blocks faced with Medusa White Portland Cement and waterproofed with Medusa Waterproofing were used. The roof is of reinforced steel and tile embedded in cement, while the interior is lined throughout with marble.

Those who have seen the work recently state that it looks better than when built, is elegant in appearance and shows remarkable durability, and is indeed a great testimonial to Medusa products.

**Concrete Blocks That
Mean New Business
and Increased
Profits**



Poured concrete building blocks, manufactured by Merrill Moore, Creston, Iowa, with a facing of Medusa White Portland Cement, embody the best qualities of other building materials,—beauty, strength, adaptability and durability.

The illustration is of the residence of Al. Bryan, Creston, Iowa, and plainly shows what can be accomplished in high-grade block construction. White granite was used as an aggregate with Medusa White Cement, and the manufacturers advise that blocks of this kind sell when placed in competition with pressed brick and cut stone.



New Lorimer Bridge, Piqua, Ohio

Railing and Ornamental Work of Medusa White Portland Cement

The structure is approximately 600 feet long, comprises four arches, and has a width of 50 feet. It is all concrete including electric lamp standards. All of the railing and ornamental work above the coping are made of cast concrete, using as an aggregate, marble grit, ground marble and Medusa White Portland Cement.

It is a perfect example of high class reinforced concrete bridge construction and reflects great credit on the builders, The Hackedorn Contracting Company, Indianapolis, Indiana. The cost of the bridge was approximately \$100,000.



Reinforced Concrete Arched Bridge, Rochester, N. Y.

This bridge is built of Portland cement concrete with a facing of Medusa White Portland Cement and crushed Barre granite. The balusters were made in cast iron molds and set in place, the hand rail being cast about the upper ends of the balusters. The bridge is 90 feet long over all.

Interior Work

PURE white floors, wainscoting, staircases, panels, etc., can be obtained by the use of one part Medusa White Portland Cement and two parts white sand or ground marble, this to be applied as a top coat before the base has reached its final set. In the production of white or colored tiles for mosaic floors, wainscoting, bath-rooms and fireplaces, a mixture of one part Medusa White and two parts ground white marble should be used. For bath-room walls mark off in small blocks just before final set, and when thoroughly hard (after a week's time) scrub off surface with a fine grain carborundum stone, and water, which will leave a permanently smooth, almost polished surface.



St. Agnes' Convent Chapel, Calcutta, India

Floors, Staircases, Steps, etc., of Medusa White Cement

In far-away Calcutta, India, Medusa White Cement is being used in large quantities and for many purposes, the most interesting of which, however, is in the construction of St. Agnes' Convent Chapel.

Several floors and staircases are of Medusa White, and the illustration herewith shows part of the chapel floor with full view of the chancel and altar, the pillars being light cast iron pipes encased in expanded metal lath and finished in Medusa White, as are also the arches,—the whole having the appearance of the finest marble. The chancel floor and altar steps are of Medusa White Cement.

William Jacks & Co., 1 Lall Bazar, our Calcutta agents, through whom the Medusa White Cement was furnished, advise as follows:

"Unfortunately in these photographs there is a good deal of shading that is unavoidable with interiors, but our friends remark that the floors are a good white color and the borders shown are inlaid with black and red cement, the effect being altogether very fine.

"Our friends further add that the building is an orphanage and a very poor institution, and the authorities would not think of going in for anything like the luxury of white marble, but the result obtained with Medusa White Cement is if anything better than marble flooring and staircases, while the cost of course is very much less.

"The first of these floors brought repeat orders for the others as well as several outside this particular institution."



Staircase, Residence of S. B. Newberry, Cleveland

In the residence of S. B. Newberry, president of the Sandusky Cement Co., Cleveland, Ohio, extensive use was made of Medusa White Portland Cement.

Medusa White with white sand and a small amount of buff mortar color was used for the exterior stucco and the entrance hall, the latter being marked off in blocks.

All of the exterior trim including doorway, urns and railings was manufactured by George Rackle & Sons Co., Cleveland, of a graded white granite aggregate and Medusa White Portland Cement, mixing $1\frac{1}{2}\%$ Medusa Waterproofing with the cement. This concrete was molded in plaster piece-molds and turned out of the forms immediately. The cast units were then given a very fine spray of water to remove the film of cement from the surface and expose the granite aggregate. When the casts were three days old they were washed with a solution of muriatic acid and water to brighten the surface, after which the concrete stone was kept moist until time for delivery.

The stairway and interior trim, also by George Rackle & Sons Co., were made of white marble aggregate and Medusa White Portland Cement, cast in glue molds. When the casts were several weeks old they were rubbed with carborundum to remove the surface cement, and were then washed with acid, which developed a beautiful white finish similar to new cut marble. The staircase is adapted from the design of one in Blois Castle, France.

F. B. Mead & James Hamilton were the architects; F. W. Mettler, the general contractor, and Charles Bonnell, the stucco contractor; all of Cleveland.

Artificial Marble

The Art Stone Company, Waynesboro, Penn., for some time has been successfully using Medusa White Portland Cement in concrete marble making, and in a great variety of decorative concrete work. The illustration gives a good idea of the artistic possibilities of concrete for interior use, and the results obtained are certainly remarkable.

By their formulas, processes and methods it is possible to imitate any marble, granite or onyx, from a pure white to all the various shades and colors desired, at a cost of about one-fourth that of natural marble, and in this Medusa White Portland Cement is an important factor. Coloring is used in the facing surface only, which is permanent and will not fade, and takes a polished finish direct from the molds, while the body of tile is of cement.



Ornamental Concrete Mantel

This mantel was designed by Adolf Schilling and built by the Pompeian Stone Co., Haddon Heights, N. J., under his direction. For this entire work Medusa White Portland Cement was used, in proportion of one cement to two and one-half white marble sand. All undercut parts were cast by the wet process in gelatin molds, and the plain and molded parts were cast in plaster of Paris molds.



The panel in mantel represents the celebrated painting "Aurora" and is equal to the best sculptured work of this kind. On each side of this panel are two enriched pilasters with Corinthian capitals, the whole being crowned with a very ornate cornice. Four caryatids support the shelf of the main mantel, and a hood with lion supports indicate that the mantel was built for a practical purpose. A finely modeled Medusa head, the trade sign of Medusa Cement, is shown on the face of hood, the latter being of verd antique color and a splendid contrast against the pure white marble effect of the mantel itself.

Apartment House, Rochester, N. Y.

Medusa White Portland Cement was used by Schaefer Bros. of Rochester, with the Vermont Marble Company's No. 2 marble as aggregate, for all the trim of the thirty-one family apartment house erected by Nathan Harris in Rochester, New York. It is of a Spanish order of architecture and one of the most attractive buildings in Rochester.

The caps and columns were cast in glue molds and the arches and cornices in plaster. Wood molds were used for the watertable, coping, belt courses, etc. The mixture was one part Medusa White Portland Cement and two parts marble of which one-tenth was imported black Carrara marble. Pieces with only one side exposed were faced about one inch with the aggregate, and a

poured slush concrete of gravel and gray Portland cement, mixed four to one, was used for the backing.

All faced surfaces were sand blasted, then tooled a drove finish with compressed air guns. As this process required the employment of stone cutters for a considerable length of time, Schaefer Bros. now sand blast all cast work and tool only the straight parts with power emery grinders, enabling them to use cheaper labor.

The use of Medusa White Portland Cement with the marble has produced very beautiful results in this work. Veredon Upham of Rochester was the architect.



Michigan School for the Deaf, Flint, Michigan

The columns of main portico of the administration building are 4 feet in diameter and 40 feet high. The Ionic caps are in bold relief and measure 6 feet at the volutes, while the state shield of Michigan is 11 feet in diameter.

All the trimmings such as watertable, window sills, belt courses, columns, state shield, etc., are of concrete stone, made of Medusa White Portland Cement and a rough aggregate of sharp gray sand, waterproofed with Medusa Waterproofing. The work was done on the grounds, manufactured and erected by The Maul Company, of Detroit, Michigan, manufacturers of art stone and cement products.

Edwyn A. Bowd, Lansing, Michigan, was the architect for this building and Theophil F. Banhagel of Ionia, Michigan, the general contractor.



Pergolas

A PROPERLY designed pergola adds an indescribable charm to the lawn or garden. It is the finishing touch to the architectural perfection of elaborate grounds and at the same time confirms the artistic character of the modest home. The pergola is by no means solely ornamental, but serves many useful purposes. As the central feature for a lawn party it not only forms an attractive bower for serving afternoon tea, but is equally delightful as a sequestered nook to pass a quiet hour in a hammock within its refreshing shade.



Concrete Pergola for Dr. J. D. Roberts, Terre Haute, Indiana

Columns, Girders and Cross Beams of Medusa White Portland Cement

Designed and Manufactured by the Pettyjohn Co., Terre Haute, Indiana



Pergola and Benches of Medusa White Portland Cement

Built by the Ruoff Construction Company, Philadelphia, Pa.

Garden Ornaments of Medusa White Portland Cement

All views shown here are of various parts of the Castana Estate, Rosemont, Penn., near Philadelphia, the home of Alba B. Johnson, President of the Baldwin Locomotive Works.

Ten flower pots three feet in diameter in the Garden of Meditation, and Spring, Summer, Autumn and Winter emblematically represented by the maiden, wife, mother and age in the Pergola of Seasons, are excellent examples of stonecrete craft. A Temple of Love, pergola of massive cast stone columns, rose trellis, lily pond, summer house, balustrade, urns, vases, exedra seat, griffins, benches, etc., show the great possibilities of decoration in the use of well executed concrete products.

The concrete was wet cast, the particular aggregates being a mixture of graded silica sand and white marble, with Medusa White Portland Cement. The plan work was cast in plaster molds and the ornamental or undercut work in gelatin molds.

After casting, at the age of ten days, the pieces were immersed in large tanks of acid solution, until the outer cement coating was removed. This treatment left a fine grain texture, similar to rubbed stone, and shows the aggregates to best advantage. The general color tone is a warm gray and ivory, resembling in every respect the marble ornaments of the old gardens abroad.

The concrete stone work was executed and finished under the direction of Adolf Schilling, Haddon Heights, N. J. (now manager of the Pompeian Stone Co.), after designs by Alexander Mackie Adams, architect, and the landscape designing is by John S. Cope, both of Philadelphia, Pa. Their co-operation in this work has produced one of the finest examples of formal gardens in this country.



J. B. Duke Estate, Somerville, N. J.

The J. B. Duke Estate, owned by the tobacco king, covers many acres of ground and formerly was a flat and almost destitute stretch of land, devoid of hills and woodlands. Hills were made, woods planted, rocks allowed to project out of the ground, and by the aid of massive pumps water was lifted from an adjoining river and caused to flow through artificially arranged lakes. These lakes are crossed by white concrete bridges, 90 feet to 125 feet long, made of Medusa White Portland Cement and white sand. The concrete stone was cast near the site and placed in position as needed, the work being backed with a gray Portland cement reinforced concrete.

At the end of the longest bridge is a mammoth white fountain, 80 feet in diameter, of Medusa White Portland Cement with Medusa Waterproofing added, which is so constructed that the water flows over the entire edge and finds its way between ragged rocks to the lake 30 feet below. Surrounding the lakes in irregular and broken form, are about 1000 feet of balustrade with wide step approaches at intervals, of Medusa White Portland Cement and washed white sand, while

concrete garden furniture of unique designs is everywhere in evidence. The bridges, walls and balustrades have taken on the appearance of the old weathered marbles of the Italian gardens, for which they are being especially admired.

Buckenham & Miller were the landscape architects, and Richards & Gaston, the general contractors, used 2500 barrels of Medusa White Portland Cement in producing this most beautiful effect in white concrete stone.



Pedestal and Ornamental
Flower Vase of Medusa
White Cement



J. B. Duke Estate, Somerville, N. J.



Bridges, Walls and
Fountains of Medusa
White Cement

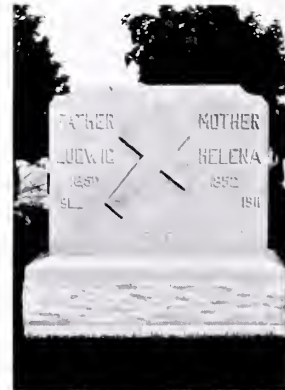
Inexpensive and Beautiful
Effect of Medusa
White Cement



Balustrades and all Ornamental
Work of Medusa
White Cement

Cast Granite Grave Stones

SCHAEFER BROS., Rochester, New York, were the manufacturers of the grave stones shown herewith and have used more Medusa White Portland Cement in this class of work than any other concern in the world, having made and sold over 600 grave stones and monuments in Rochester alone, all of which were of concrete with a facing of white granite and black marble mixed three to one with Medusa White. Over forty different designs were made, all cast in wood molds with the ornamentation carved in.



For cemetery work—monuments, vaults, columns, urns, and plot borders—Medusa White Cement and ground white marble produce beautiful results. The finished product should be washed off with dilute muriatic acid, which gives it a sparkling effect rivaling the best white marble. Gelatine and plaster molds are generally used.

Medusa White Cement in Monumental Work



Joseph A. Trombley, Saginaw, Michigan, built and erected in memory of his daughter, in St. Andrew's Catholic cemetery, a monument fourteen feet high with base of Medusa White Portland Cement and figure of Bedford limestone.

The base is five and one-half feet high, five feet square, and one panel is a marble slab for the inscription. The base was made in the fall of 1911, and today is without a check and is as hard as flint.

Mr. Trombley also built a concrete cross, 7 feet by 20 feet, with a base 5 feet square which sets 4 feet below the surface of the ground. First step above ground is 5 feet square by 16 inches high, and second step is 3 feet square and also 16 inches in height with an inscription—"1886"—the year the cemetery was opened. The cross from arms down is 16 inches square and 16 feet high, and for reinforcing has two I-beams 4 inches by 6 inches down to bottom of foundation. The arms are also reinforced with I-beams, but the top portion which is 3 feet 6 inches high is not reinforced.

Wood molds were used, covering three sides, thus leaving one side open to work from. The cross is of Medusa Gray Portland Cement and coarse gravel, mixed one to five, with a face averaging $1\frac{1}{2}$ inch in thickness of one part Medusa White Portland Cement, two parts fine white sand, and Medusa Waterproofing to the extent of 2 per cent of weight of cement.

Mr. Trombley states that the cross is perfectly waterproof and after much inclement weather and heavy rains it is pure white and not discolored in the least.



Ornamental Lighting Posts

The twenty-five electric lighting posts around the Plaza Hotel, manufactured by the Eastman Plastic Relief Co., St. Louis, are fourteen and a half feet high and two feet square at the base, each surmounted by a 750-watt lamp. They were cast in one piece, consisting of gray Portland cement, sand and gravel, and after being placed in position were plastered, rough cast, with Medusa White Cement and white sand.



Concrete Lawn Stump

To prove our oft repeated assertion that the possibilities of Medusa White Cement are unlimited, we reproduce here a view of a white concrete stump, manufactured by the Art Stone Company, Tampa, Florida.

This lawn ornament is 13 inches in diameter at the top, 24 inches at bottom, and 15 inches high. The entire center is hollow which allows plants to root deeply in the ground. It is indeed a novel application of white cement in concrete specialties.

The manufacturers state that these are inexpensive to make, no molds whatever being used and in view of this no two are exactly alike.

Ornamental Concrete Fountain

This illustration is of a fountain, made in gelatin molds of one part Medusa White Portland Cement to three parts white silica sand. It was manufactured by the Architectural Decorating Co., Chicago, Ill., who use Medusa White in all cases when white cement is specified or a white finish is desired by their customers.

The manufacturers state that flexible material must be used for the molds of ornamental work to get the undercutting in the ornament out of the mold without breaking the ornaments. The molds are treated with grease to prevent the casts from sticking to the mold. After the cast is completed it is washed off with a solution of muriatic acid and water, which solution takes all the grease off the cast and leaves a pure white cement surface. Medusa White Portland Cement has been used in their casting department for a number of years and has always given entire satisfaction.



Capitals of Concrete



Twenty of these capitals were used in the construction of St. Monica's church of Rochester, for which Komes & Kauzor of Pittsburgh were the architects and C. W. Eldridge, Rochester, the supervising architect. They were modeled by Adolph Schmidt, designer for the manufacturers, Schaefer Bros., Rochester, N. Y., from details furnished by the architects, and were cast in gelatin molds. The mix consisted of granite and Medusa White Cement with yellow ochre, and the finished capitals appear to be of Indiana limestone.



Concrete Steel Signs and Standards

W. H. Filer, Grove City, Penn., manufacturer of artistic concrete products, offers a very novel specialty in guide posts, consisting of a reinforced concrete standard with concrete boards.

The posts are ornamental in design, having beveled edges and sunken panels. The concrete inscription boards are neatly made, and letters are of cement in black and other colors, $\frac{1}{4}$ inch to $\frac{1}{2}$ inch in thickness, dovetailed in the body of the work, and as they are non-fading, the signs are indestructible and everlasting.

These posts and signs are made of granite and Medusa White Portland Cement and photographs cannot emphasize the beauty and clearness of the product. Mr. Filer states that "the best material adaptable for this work that I can find is Medusa White Portland Cement." He also uses this material for railroad mile posts, monuments, porch columns, building blocks, caps and sills, lintels, etc.

"The Coming of St. Louis"

Executed in Medusa White Cement

The panel in bold relief over the entrance of the cafe of the Plaza Hotel, St. Louis, was modeled by R. P. Bringham and represents "The Coming of St. Louis." The side of the panel is 7 feet wide by 12 feet high, or 15 feet in height including the sill and cornice.

A mold of plaster was used, and the cast is of one part Medusa White Portland Cement and two parts crushed marble, well mixed to the consistency of thick cream. The weight of panel is about two tons.

This very commendable piece of ornamentation was executed by the Eastman Plastic Relief Company, St. Louis, and proves the manufacturers to be artists in their line of achievement.



Specifications

In the Following Specifications all Proportions Stated are by Volume

Stucco on Metal Lath

Two-coat work is all that is necessary, except when the finish coat is to be a slap-dash or stipple, then three coats should be applied.

First Coat:

- 1 part gray Portland cement
- 2 $\frac{1}{2}$ parts clean, sharp sand

This coat should have a minimum thickness over the lath at any point of not less than $\frac{1}{4}$ inch, making a total thickness of from $\frac{1}{2}$ to $\frac{3}{4}$ of an inch.

The plaster must be forced well into the meshes of the lath so as to form a good key. Do not trowel the plaster too much; just enough to force it through the lath and to bring it to the required thickness, entirely covering the lath. While the first coat is wet it should be scratched deeply so it will present a rough surface to bond mechanically with the next coat, and as soon as the first coat has set sufficiently to support the second coat, the latter should be applied.

Second Coat:

- 1 part Medusa White Portland Cement
 - 2 parts ground marble or white sand
- To be $\frac{1}{4}$ to $\frac{3}{8}$ of an inch thick.

Third Coat:

If slap-dash or stipple coat is desired, use same mix as for second coat, $\frac{1}{4}$ of an inch thick.

(Keep wet as already stated.)

Stucco on Brick, Stone, Hollow Tile or Rough Surfaces

In preparing a wall for a stucco coat, clean the surface thoroughly by removing all loose material with a wire brush or stiff broom. On a brick or stone wall dig out the mortar from the joints to a depth of $\frac{1}{2}$ to $\frac{3}{4}$ of an inch, or pick back the joints when brick or stone are laid. The wall must then be saturated with water and still be wet when first coat is applied.

First Coat:

- 1 part gray Portland cement
 - 2 $\frac{1}{2}$ parts clean, sharp sand
- To be $\frac{3}{8}$ of an inch thick.

This coat must be well troweled so as to fill all crevices in the wall, and thoroughly scratched to insure a perfect bond for the second coat.

Second Coat:

- 1 part Medusa White Portland Cement
 - 2 parts white sand or ground marble
- To be $\frac{1}{4}$ to $\frac{3}{8}$ of an inch thick.

Third Coat:

If slap-dash or stipple coat is desired, make second coat $\frac{3}{8}$ of an inch thick, use same mix as for second coat, and make finish coat $\frac{1}{4}$ of an inch thick.

(Keep wet as already stated.)

Stucco on Concrete Block, Monolithic or Smooth Surfaces

If the wall to which the stucco is to be applied is smooth and hard, clean the surface thoroughly (in some cases it is necessary to clean the surface with a solution of one part commercial muriatic acid and ten parts water, which must be thoroughly rinsed off afterwards) and brush well into it a neat gray cement grout, leaving the surface rough, and while it is still green apply finish coat.

Finish Coat:

- 1 part Medusa White Portland Cement
 - 2 parts white sand or ground marble
- To be $\frac{3}{8}$ of an inch thick.

(Keep wet as already stated.)

Non-Staining Portland Cement Mortar

For Laying and Backing Limestone, Terra Cotta and Face Brick:

- 1 part Medusa White Portland Cement
- 3 parts fine white sand

For Laying and Backing Granite:

- 1 part Medusa White Portland Cement
- 3 parts fine white sand

For Setting Marble, Glazed Tile, Etc.:

- 1 part Medusa White Portland Cement
- 1 part ground marble

Henry S. Spackman Engineering Co.

Inspecting Engineers and Chemists

2024 Arch Street

Test No. P-8240

Philadelphia, Pa., 5-18-16.

9 months report of test of Medusa White Portland Cement.

Submitted by The Sandusky Cement Co.

Reported to The Sandusky Cement Co., Engineers Bldg., Cleveland, O.

Description of Sample: Sample taken by our representative from stock at warehouse of Samuel H. French & Co., Philadelphia, Pa.

Fineness:

Passing No. 100 Sieve..... 99.4%
Passing No. 200 Sieve..... 86.6%

Constancy of Volume Test:

Cold Water Pat..... O. K.
Air Pat. O. K.
Steam Test O. K.
Boiling Water Test O. K.

Setting Time: Gilmore Needle

Initial Set 3 hrs. 15 min.
Final Set 6 hrs. 10 min.
Per cent. of Water..... 25.0
Temperature of Air..... 78 deg. F.
Temperature of Water..... 70 deg. F.
Specific Gravity 3.16

Tensile Strength of Standard Briquettes (1 Square Inch Section)

Composition	Per Cent of Water	TIME			Date Made	Date Tested	Strength in Pounds	
		In Air	In Water	Total			Briquettes	Average
Neat	25.0	24 hrs.		24 hrs.	8/12	8/13		297
"	"	"	6 days	7 days	"	8/19		608
"	"	"	27 "	28 "	"	9/9		717
"	"	"	89 "	90 "	"	11/12		693
"	"	"	179 "	180 "	"	2/12		822
"	"	"	269 "	270 "	"	5/12		682
1 Cement								
3-Ottawa								
Sand	9.5	"	6 "	7 "	"	8/19		228
"	"	"	27 "	28 "	"	9/9		363
"	"	"	89 "	90 "	"	11/12		351
"	"	"	179 "	180 "	"	2/12		452
"	"	"	269 "	270 "	"	5/12		426

Chemical Analysis: Laboratory No. 3058.

Silica, (SiO₂) %
Alumina, (1A₂O₃) %
Iron Oxide, (Fe₂O₃) %
Lime, (CaO) %
Magnesia, (MgO) 93%
Sulphuric Anhydride (SO₃) 1.54%
Loss on Ignition.....

Remarks:

This Car bears private seals of Henry S. Spackman Engineering Co.

This cement meets at this period the specifications of the American Society for Testing Materials in all respects.

Respectfully Submitted,

Henry S. Spackman Engineering Company

E. L. CONWELL,

Vice President.

The Sandusky Cement Co.

Analysis and Tests of Medusa White Portland Cement

Average Chemical Analysis

Silica	24.20
Iron Oxide	.32
Alumina	7.10
Lime (CaO)	63.42
Magnesia (MgO)	1.42
Sulph. Trioxide (SO ₃)	1.64
Loss on Ignition.....	1.70
	99.80

Average Tensile Strength Per Square In. Neat

24 Hours	400 pounds
7 Days	691 pounds
28 Days	773 pounds
1 Year	820 pounds

Sand 1 to 3

7 Days	250 pounds
28 Days	409 pounds
1 Year	452 pounds

Average Tests

Setting Time, Initial.....	2 hrs. 35 min.	Per Cent Water Used, Neat.....	22.0
Setting Time, Final.....	5 hrs. 20 min.	Per Cent Water Used, Sand.....	9.0
Fineness—Through No. 100 Sieve.....	99.4%	Specific Gravity	3.10
Fineness—Through No. 200 Sieve.....	92.0%		

Form 204-B

W. A. F. DODGE
INSPECTING ENGINEER
SILVESTRE, MALLARD
DIST. INSPECTING ENGINEER

ISTHMIAN CANAL COMMISSION

OFFICE OF THE
INSPECTING ENGINEER
WASHINGTON, D. C. March 14, 1914.

Washington Ord. No. 43905
Canal Zone Reg. No. 7227-A

Re: C. Report, Corp. and Ph. Co., M. D. A.,
General Pur. Co., etc.

Sir:

I have the honor to acknowledge the above-mentioned order to
Sandusky Portland Cement Company, Sandusky, Ohio.

Details as follows:

Item No.	Quantity	Unit	Article
1	400	Bals.	White Medusa Cement.

Note: Sample taken at random for retest.

has been passed for shipment to Colon. Inspector's mark, ICC 19

Authority 52037 issued 3/6/14 by Inspector John F. Piper.

Time delayed above shipment no days.

Penalties charges against Contractor None.

Inspection made 3/6/14 at York, Pa., by Inspector John F. Piper.

Tests None required.

Subject to rejection at Isthmus for the following or other departures:

1st

Very respectfully,

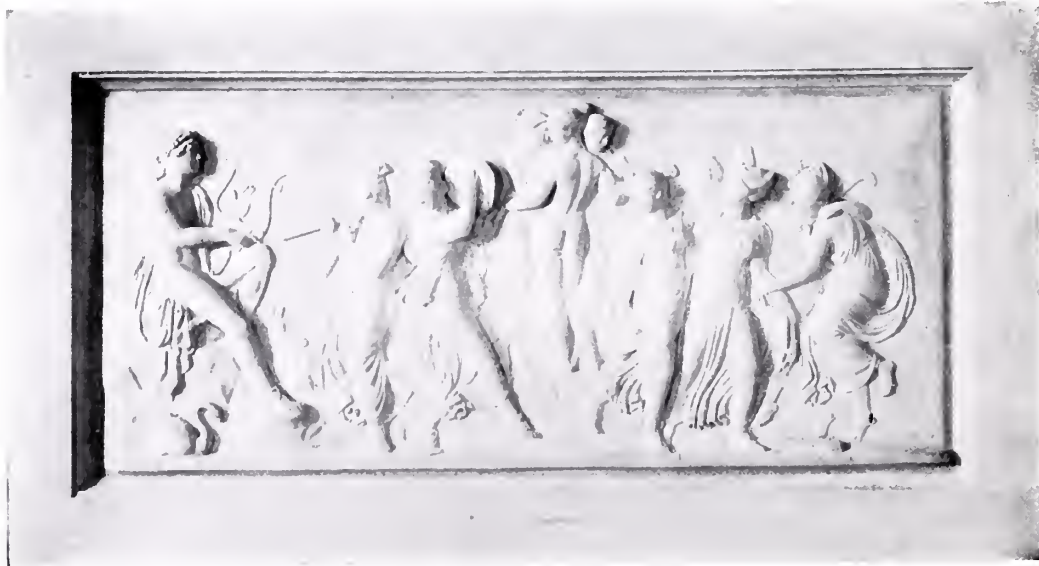
John F. Piper
Inspecting Engineer.

Copy to Disbursing Officer.
Copy to Chief Quartermaster.
Copy to Inspector (please check).
Copy to Inspector (please check and return).
Copy to order file.

Medusa White Cement Passes U. S. Government Tests

Fac-simile report of Inspecting Engineer, Isthmian Canal Commission, showing inspection of 400 barrels Medusa White Portland Cement at our York, Pennsylvania, factory, which were passed for shipment to Colon, to be used in the Canal Zone for permanent government quarters which are being erected on the Isthmus.

Several thousand barrels of Medusa White Portland Cement were shipped to Panama for the United States Government, and not one was rejected. The samples for inspection, it will be noted, were "taken at random" from stock at our mill, and the result testifies as to the general high quality of Medusa White Portland Cement, which is also being used in much other government work.



These perfect and elaborate decorative panels of Medusa White Portland Cement compare favorably with costly carved stone, and show the great possibilities of Medusa White Cement for effective ornamentation, figures, medallions, cartouches, frieze courses and work in bas-relief. They exemplify the adaptability of concrete for architectural purposes, and the use of Medusa White Cement permits beautiful and dignified decoration where a minimum cost is essential.



*Urn and Stand, executed in
Medusa White Portland Cement
by Pompeian Stone Company,
Haddon Heights, N. J.*